

ROCK LINED CHUTE

CONSTRUCTION DATA

OVERFALL (F) =	_____ FEET
CHUTE SLOPE (S) =	_____ :1
SIDE SLOPES (Z) =	_____ :1
ENTRANCE LENGTH (Le) =	_____ FEET
CHUTE LENGTH (Lc) =	_____ FEET
OUTLET LENGTH (Lo) =	_____ FEET
ENTRANCE ROCK HEIGHT (de) =	_____ FEET
CHUTE ROCK HEIGHT (dc) =	_____ FEET
OUTLET ROCK HEIGHT (do) =	_____ FEET
BOTTOM WIDTH (b) =	_____ FEET
ENTRANCE B.W. (be) =	_____ FEET
RIPRAP THICKNESS =	_____ IN
BEDDING THICKNESS =	_____ IN

CONSTRUCTION ELEVATIONS

TOP OF LEVEE ELEV. =	_____
EMERGENCY SPILL. ELEV. =	_____
INLET ELEV. =	_____
OUTLET ELEV. =	_____

ESTIMATED QUANTITIES

CLEARING:	_____ AC.
EXCAVATION & BACKFILL:	_____ CU. YD.
RIPRAP:	_____ TONS
BEDDING:	_____ TONS
OR GEOTEXTILE FABRIC:	_____ SQ. YD.
REVEGETATION:	_____ AC.
OTHER:	_____

NOTES:

1. THE CHUTE SLOPE (S) SHALL NOT BE STEEPER THAN 5:1.
2. THE SIDES SLOPES (Z) SHALL NOT BE STEEPER THAN 2:1.
3. THE ENTRANCE APRON WIDTH SHALL VARY UNIFORMLY FROM (be) TO (b).
4. PROVIDE AN EMERGENCY SPILLWAY, ONE ON EACH SIDE IF FEASIBLE, WITH THE CREST ELEVATION 0.3' TO 0.5' BELOW TOP OF ROCK ON ENTRANCE SIDE SLOPES.
5. GEOTEXTILE FABRIC MAY BE USED IN LIEU OF BEDDING.
6. AFTER PLACEMENT OF RIPRAP, SPREAD ENOUGH SMALL RIPRAP FRAGMENTS OR BEDDING MATERIAL OVER ENTIRE SURFACE OF THE CHUTE TO FILL THE VOIDS IN THE RIPRAP AND COMPACT RIPRAP WITH CONSTRUCTION EQUIPMENT. A MIXTURE OF SOIL AND SEED MAY BE SPREAD OVER THE RIPRAP.
7. TILE OUTLETS SHALL NOT BE ROUTED THROUGH THE STRUCTURE.

LANDUSER	_____
LOCATION	_____ COUNTY SWCD, INDIANA

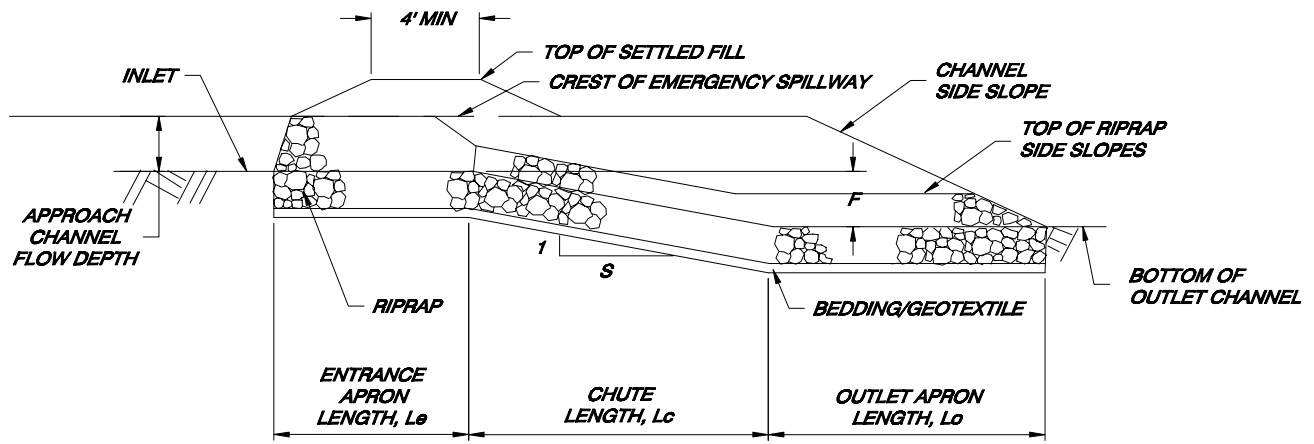
ROCK LINED CHUTE

GENERAL LAYOUT
INDIANA

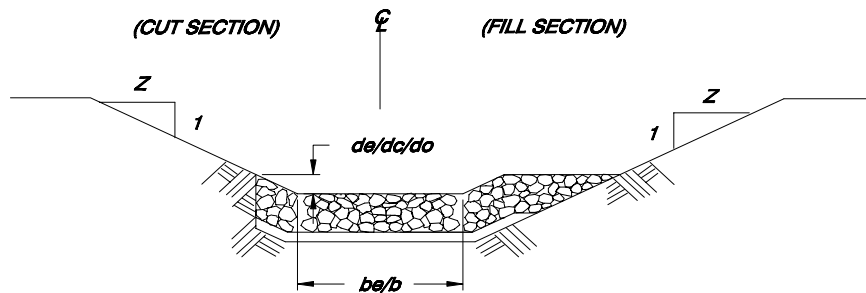
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

Designed	_____	Date	_____	Approved by	_____	Date	_____
Drawn	_____	Title	_____	Title	_____		
Traced	_____	Title	_____				
Checked	_____	Sheet	_____	Drawing No.	_____		
		No	_____				
		of	_____				

NOT TO SCALE



PROFILE ALONG CENTERLINE



TYPICAL CROSS SECTION

RIPRAP GRADATION

d50 = _____ INCHES

SIZE	% PASSING
_____	100%
_____	50%
_____	15%

BEDDING GRADATION

EQUIVALENT TO INDOT

AGGREGATE # _____

GEOTEXTILE

TYPE: NON-WOVEN, NEEDLE-PUNCHED

TENSILE STRENGTH: 180 LBS. MIN.

BURSTING STRENGTH: 320 PSI MIN.

ELONGATION @ FAILURE: 50% MIN.

U.V. LIGHT RESISTANCE: 70% MIN.

PUNCTURE: 80 LBS. MIN.

PERMITTIVITY: 0.70 SEC⁻¹ MIN.

NOT TO SCALE

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LOCATION	_____ COUNTY SWCD, INDIANA

ROCK LINED CHUTE

GENERAL LAYOUT
INDIANA

U.S. DEPARTMENT OF AGRICULTURE
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	_____	of	_____
		Drawing No.	_____

General

Construction operations shall be carried out in such a manner and sequence that erosion and air and water pollution will be minimized and held within acceptable limits. All operations shall be carried out in a safe and skillful manner. Safety and health regulations shall be observed and appropriate safety measures used.

The completed job shall conform to the lines, grades, and elevations shown on the drawings or as staked in the field.

Site Preparation

All trees, stumps, brush, and similar materials shall be removed from the construction area and disposed of in a manner consistent with environmental concerns and proper functioning of the structure.

Excavation

To the extent needed, all suitable materials removed from the specified excavation shall be used in the construction of the earth fill areas of the structure. All spoil deposited adjacent to the structure and in the adjacent area shall have a positive grade to drain toward the structure.

Moisture Control

The minimum moisture content of the fill material and foundation shall be such that when kneaded in the hands, the fill material will form a ball which does not readily separate. The maximum moisture content is when conditions are too wet for efficient use of the hauling and compaction equipment.

Construction Tolerances	
Depth at Centerline:	Grade to 0.1 foot below
Width:	10% wider not to exceed 1.0 foot
Top of Levee:	Grade or above
Side Slopes:	±0.1 ft./ft.

Finish and Cleanup

The waterway and the designated spoil areas will be finished in a relatively smooth condition ready for seeding. All rocks and roots 3" in diameter or larger shall be removed from the waterway and spoil areas.

Vegetative Establishment

Where excess surface water runoff is a problem, water shall be directed away until vegetation is established, if possible. Any protective works installed shall be removed after vegetation is established, and the disturbed area shall be seeded to permanent grass.

Work the lime and fertilizer into the soil to a depth of 2-3 inches with a harrow or disk. Prepare a firm seedbed with a cultipacker or cultipacker-type seeder or seed with a no-till drill. Plant the seed to a depth of 1/4 to 1/2 inch.

When summer or fall temporary seeding has been used, remove or incorporate temporary cover (or seed with a no-till drill) after August 10 (summer) or March 1 (fall). Apply lime, fertilizer, mulch, and seed in a normal manner.

Unless soil tests indicate otherwise, apply lime and fertilizer as indicated below. In addition, apply mulch, seed, and temporary seeding as indicated in the following tables.

Seeding Type	Rate (lb/ac.)

Mulch Type	Rate (ton/ac.)

Temporary Seeding Type	Rate (lb/ac.)

Lime	Rate (ton/ac.)	Or to a pH of:

Fertilizer	Rate (lb/ac.)	Type:
		12-12-12 or equiv.

Date	Lime	Fertilizer	Mulch	Seed	Temp. Seed
3/1-5/10	Yes	Yes	Yes	Yes	No
5/11-8/9	Yes	1/3 of rate	No	No	Yes
8/10-9/30	Yes	Yes	Yes	Yes	No
10/1-11/15	Yes	1/3 of rate	No	No	Yes
11/15-2/28	Yes	Yes	Yes	*	No

* Apply 150% of regular rates as a dormant seeding under mulch. Do not apply clover seed.

Operations and Maintenance

A maintenance program shall be established by the landuser to maintain the capacity and vegetative cover. Items to consider are:

1. Do not graze seeded areas during establishment and when conditions are wet.
2. Protect structure from damage by farm equipment and vehicles.
3. Keep structure inlet and outlet areas free from any obstructions.
4. Repair structure as soon as possible after damage is noted.
5. Reestablish vegetative cover immediately where scour erosion has removed the established seeding.
6. Maintain effective erosion control of the contributing watershed to prevent siltation and loss of capacity.
7. Add riprap as needed to maintain chute elevations.

LANDUSER	_____
	COUNTY SWCD, INDIANA
LOCATION	_____

ROCK LINED CHUTE

CONSTRUCTION SPECIFICATIONS / O&M
INDIANA

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

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